U.S. Department
of Transportation

**Research and
Special Programs
Administration**

400 Seventh Street, S.W.
Washington, D.C. 20590

AUG 28 2003

The Honorable Ellen G. Engleman
Chairman
National Transportation Safety Board
490 L'Enfant Plaza East, SW
Washington, DC 20594

Dear Chairman Engleman:

This is the Research and Special Programs Administration's (RSPA) response to the National Transportation Safety Board (NTSB) Safety Recommendations P-02-04 and P-02-05, resulting from the hazardous liquid pipeline accident in Bellingham, Washington. RSPA requests that these recommendations be classified as "OPEN - Acceptable Action" based on proposed advisory bulletins on 1) testing protocols for control/relief valves and 2) modification procedures for Supervisory Control and Data Acquisition (SCADA) systems to address systems development and operations issues.

Although Recommendation P-02-05 calls only for an advisory bulletin, RSPA has taken additional actions to improve SCADA and controller operations and our inspection process. RSPA has initiated a SCADA study to establish a national and uniform perspective on the safety evaluation of pipeline SCADA technology. In addition to developing inspection and guidance criteria, the project will also draw on the results of the NTSB's ongoing SCADA survey and report. RSPA has also initiated a study of Controller Certification in compliance with Section 13(b) of the Pipeline Safety Improvement Act of 2002 to develop tests and other requirements for certifying the qualifications of individuals who operate computer-based systems for controlling the operations of pipelines.

If we can be of further assistance, please contact me or James Wiggins, Director of Policy and Program Support at (202) 366-4831.

Sincerely yours,

Samuel G. Bonasso
Acting Administrator

Enclosures: 3

cc: Robert Chipkevich, NTSB
Rod Dyck, NTSB

RSPA Response to
NTSB Safety Recommendations
P-02-04 and P-02-05

P-02-4 **Develop and issue guidance to pipeline operators on specific testing procedures that can (1) be used to approximate actual operations during the commissioning of a new pumping station or the installation of a new relief valve, and (2) be used to determine, during annual tests, whether a relief valve is functioning properly.**

Status: Initial RSPA response to recommendation.

Response: RSPA will issue an advisory bulletin by December 2003 to provide guidance to pipeline operators on testing procedures for control and relief valves. They perform different functions and five-year testing is already required on relief valves. The guidance will address the issues of testing a control valve that can operate as a pressure reducing valve, a flow controller, or a relief valve.

Action Requested: RSPA requests that Safety Recommendation P-02-04 be classified as "OPEN – Acceptable Action" based on the proposed actions.

P-02-5 **Issue an advisory bulletin to all pipeline operators who use supervisory control and data acquisition (SCADA) systems advising them to implement an off-line workstation that can be used to modify their SCADA system database or to perform developmental and testing work independent of their on-line systems. Advise operators to use the off-line system before any modifications are implemented to ensure that those modifications are error-free and that they create no ancillary problems for controllers responsible for operating the pipeline.**

Status: Initial RSPA response to recommendation.

Response: On July 16, 1999, RSPA issued an advisory bulletin to operators of gas and hazardous liquid pipeline systems on the need to review the capacities of their SCADA systems to operate under abnormal situations. This included ensuring that modifications do not adversely affect overall performance of the SCADA system. We recommended that operators consult with their system designers to confirm procedures for safely implementing changes to SCADA system hardware and software.

In response to this recommendation, RSPA will prepare and issue an additional advisory bulletin to all pipeline operators who use SCADA systems. The notice will address systems development and operations coordination. It will advise pipeline operators to establish thorough testing regimes for their SCADA systems for application when modifications or enhancements are being designed and implemented. It will recommend that changes be developed and tested first on off-line workstations, then deployed on-line under close monitoring at times when there are a minimum number of operational changes expected on the pipeline. Applying these techniques will help ensure that changes in the SCADA system environment do not have an unexpected effect on pipeline operations.

RSPA assisted NTSB in developing a SCADA survey for hazardous liquid pipeline operators. The survey consists of nearly 70 questions on SCADA systems in use by hazardous liquid pipeline operators, including system configurations, manufacturers, data collected, pipeline parameters controlled, and issues encountered in employing SCADA system technologies. We understand that the survey has been sent to more than 150 pipeline operators and responses are expected in September 2003, to be followed by an NTSB report in early 2004. RSPA intends to use the SCADA data and the NTSB report to improve our monitoring of pipeline SCADA systems and operational control.

RSPA has initiated a SCADA study to establish a national and uniform perspective on the safety evaluation of pipeline SCADA technology. In addition to developing inspection and guidance criteria, the project will also draw on the results of the NTSB's SCADA survey and report. By the end of 2003, we will review how SCADA systems are referenced, directly or

indirectly, in the pipeline safety regulations. In early 2004, we will revise SCADA inspection protocols. Later in 2004 we will begin development of a multi-tier SCADA inspection approach. The attached document describes the SCADA initiative in more detail.

RSPA has also initiated a study of Controller Certification. Section 13(b) of the Pipeline Safety Improvement Act of 2002 (PSIA), directs the Secretary of Transportation to develop tests and other requirements for certifying the qualifications of individuals who operate computer-based systems for controlling the operations of pipelines. The project team will evaluate current operator qualification practices for pipeline controllers in collaboration with a study team sponsored by the gas and hazardous liquid industry. By the end of 2003, we will solicit information on current controller qualification and certification processes. In 2004 we will develop a certification program, review the NTSB SCADA survey and report, and begin pilot projects. Through research and pilot program evaluations, we will determine the best combination of prescriptive and performance-based requirements that should be adopted as certification criteria for pipeline controllers. The attached document describes the Controller Certification initiative in more detail.

We expect to request closure of this recommendation by December 2003 based on issuance of an additional advisory bulletin to all pipeline operators who use SCADA systems.

Action Requested: RSPA requests that Safety Recommendation P-02-05 be classified as "OPEN – Acceptable Action" based on the proposed actions.